

## CHAPTER 4

### ANALYSIS AND DESIGN

#### 4.1 Analysis

This stage of analysis is discussing about how to making the application, so it can be known the application needs to be made. The problem to be solved in this stage of analysis is how to store user input data using linked list structure data and how to visualize data that has been stored in linked list.

The problem solving process of storing data from user input requires a method of insert button in which there is Edit text. The inputted data in the edit text will be converted to a string and stored in a linked list. The results of data that has been stored will be displayed by creating a canvas method. With the canvas method can make it easy to visualize the linked list.

#### 4.2 Design

##### 4.2.1 Use case Diagram

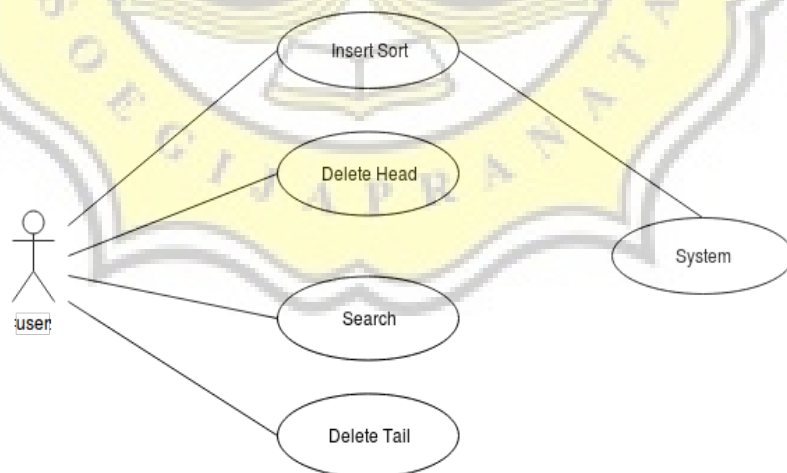


Illustration 4.1: Use Case Diagram

Based on the use case diagram above, the use of the program begins by doing insert sort to input the desired data. Data that has been inputted will be

processed and saved to linked list. If the data has been stored, the user can run the next process. The user can perform delete head that serves to delete data from front. Users can also perform a search that serves to find data according to input. The last user can do delete tail that serves to delete data from behind.

#### 4.2.2 Flowchart insert

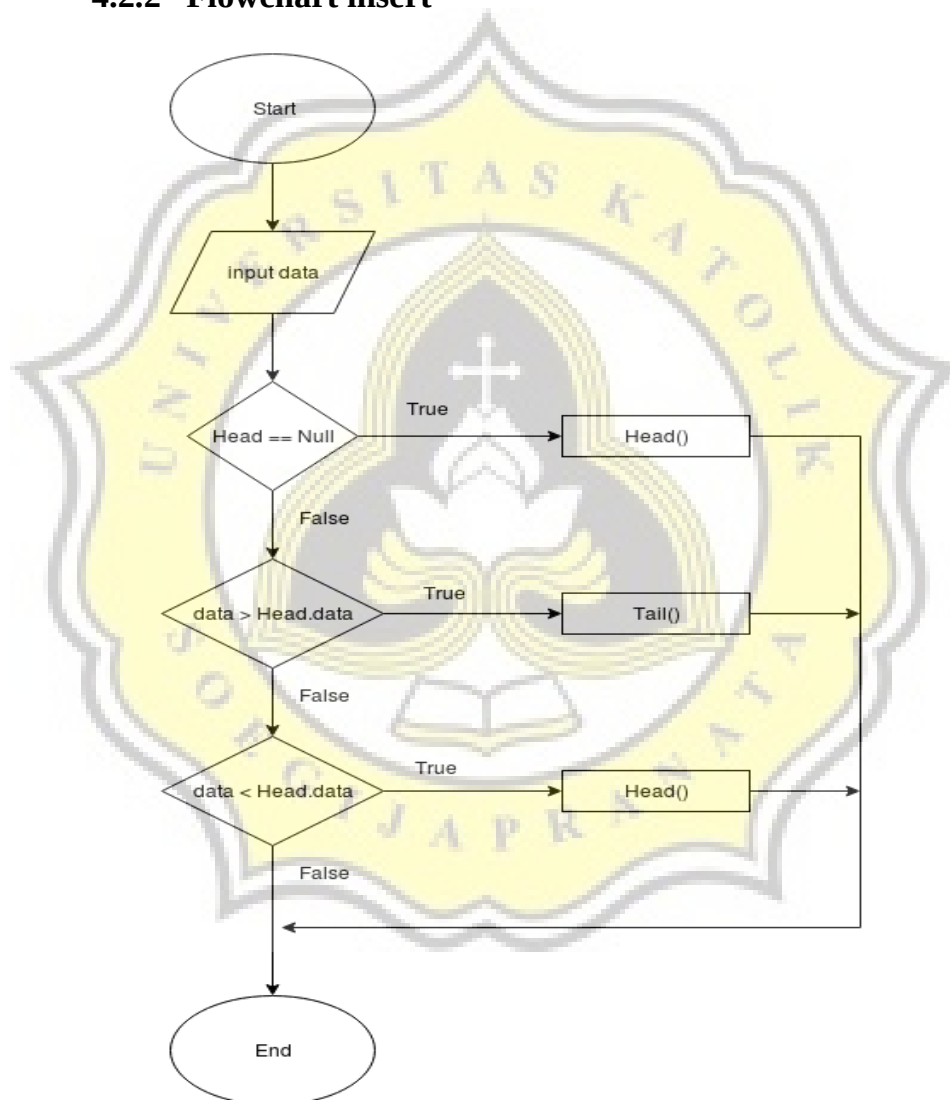


Illustration 4.2: Flowchart Insert

Based on the insert sort flowchart above, the program starts with meginput data. If the head is equal to null, if true then it will be stored as head and wrong will do the next checking. If the data is larger than the head of data, if true then it

will be stored as the tail and wrong will do the next checking. If the data is smaller than the data head, if true then it will be stored as head and wrong will be finished. Lastly all data stored as head and tail will be displayed and completed.

### 4.2.3 Flowchart Searching

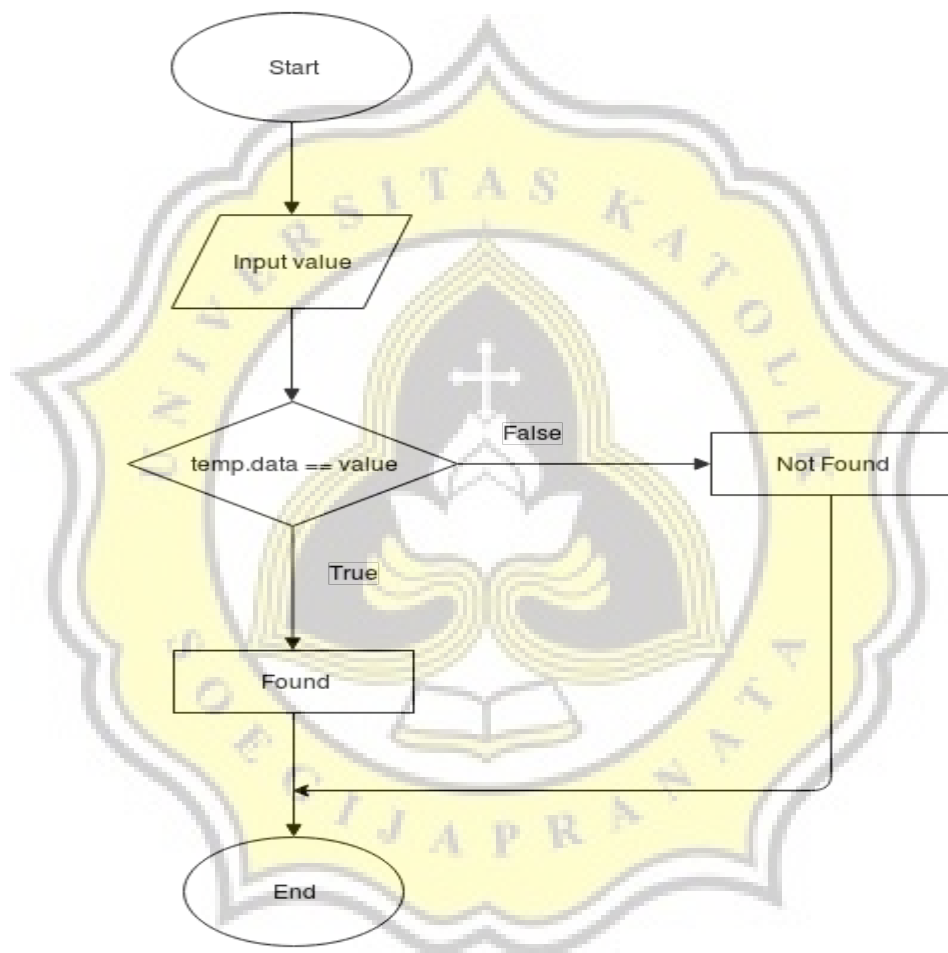


Illustration 4.3: Flowchart Searching

Based on flowchart searching above, this program starts with input data to be searched. If temp data is equal the data, if true then the data is found and wrong then the data is not found. The last data found will be displayed and completed.

#### 4.2.4 Flowchart Delete Head

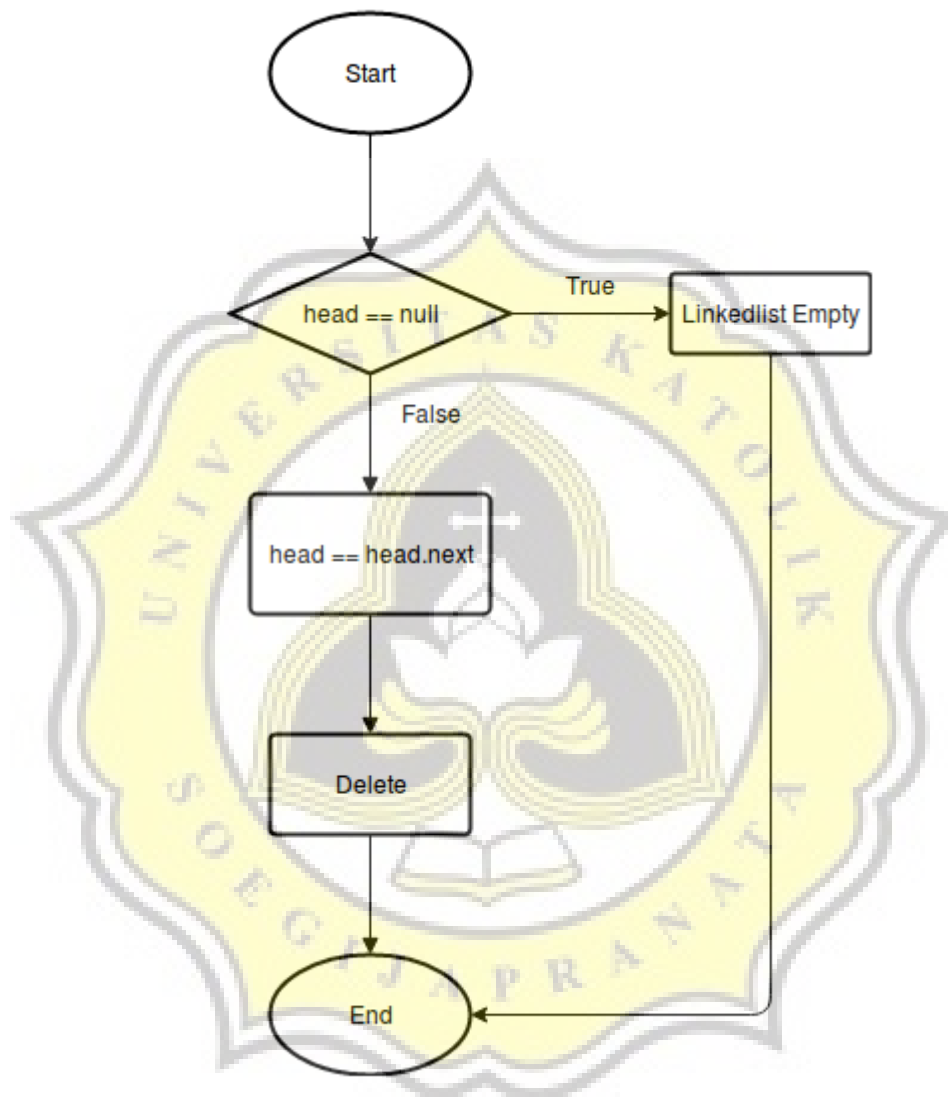


Illustration 4.4: Flowchart Delete Head

Based on flowchart delete head above, this program can remove data from head. If head is equal to null, if true then linkedlist is empty and false then head is equal to head next. The head data will be delete and finished.

#### 4.2.5 Flowchart Delete Tail

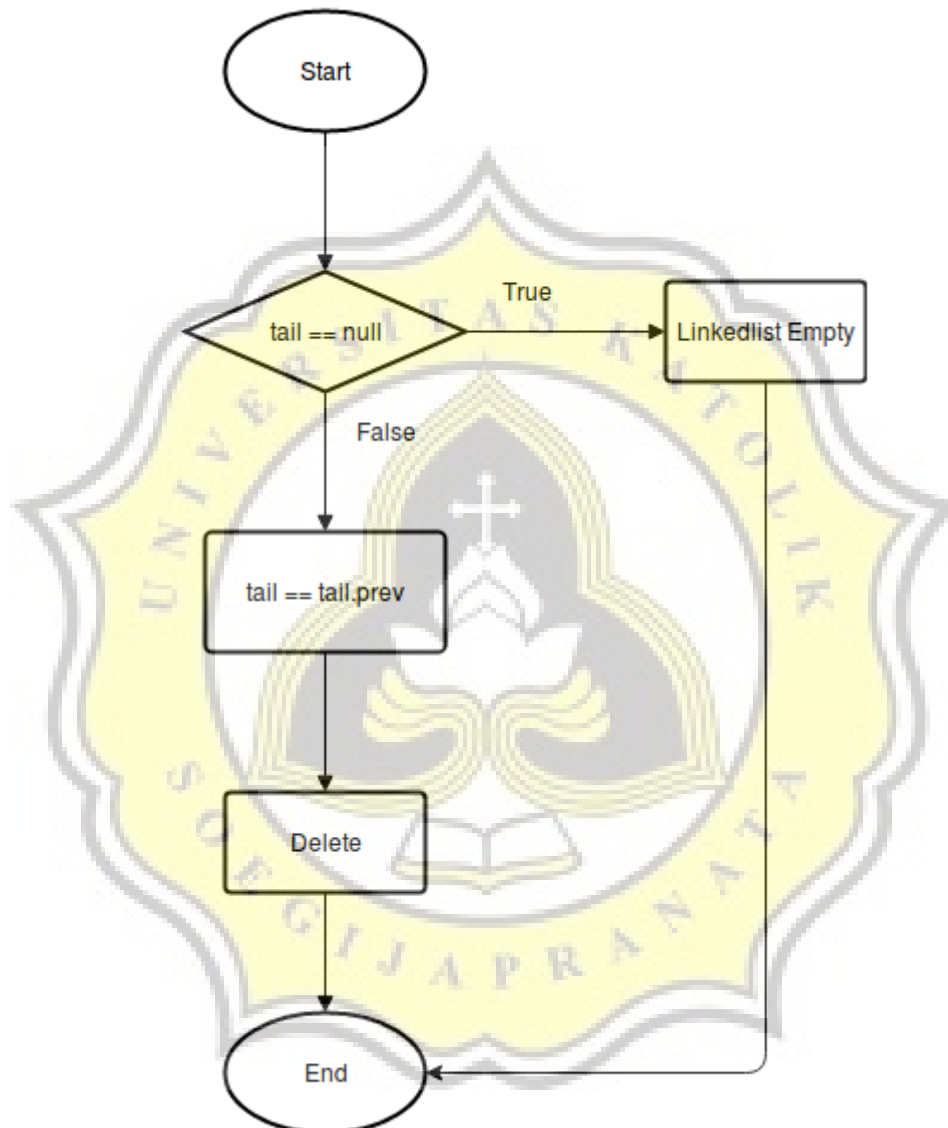


Illustration 4.5: Flowchart Delete Tail

Based on flowchart delete tail above, this program can remove the data from the back. If tail is equal to null, if true then linkedlist empty and false then tail is equal to tail previous. Furthermore tail data will be delete and completed.

#### 4.2.6 User Interface Design

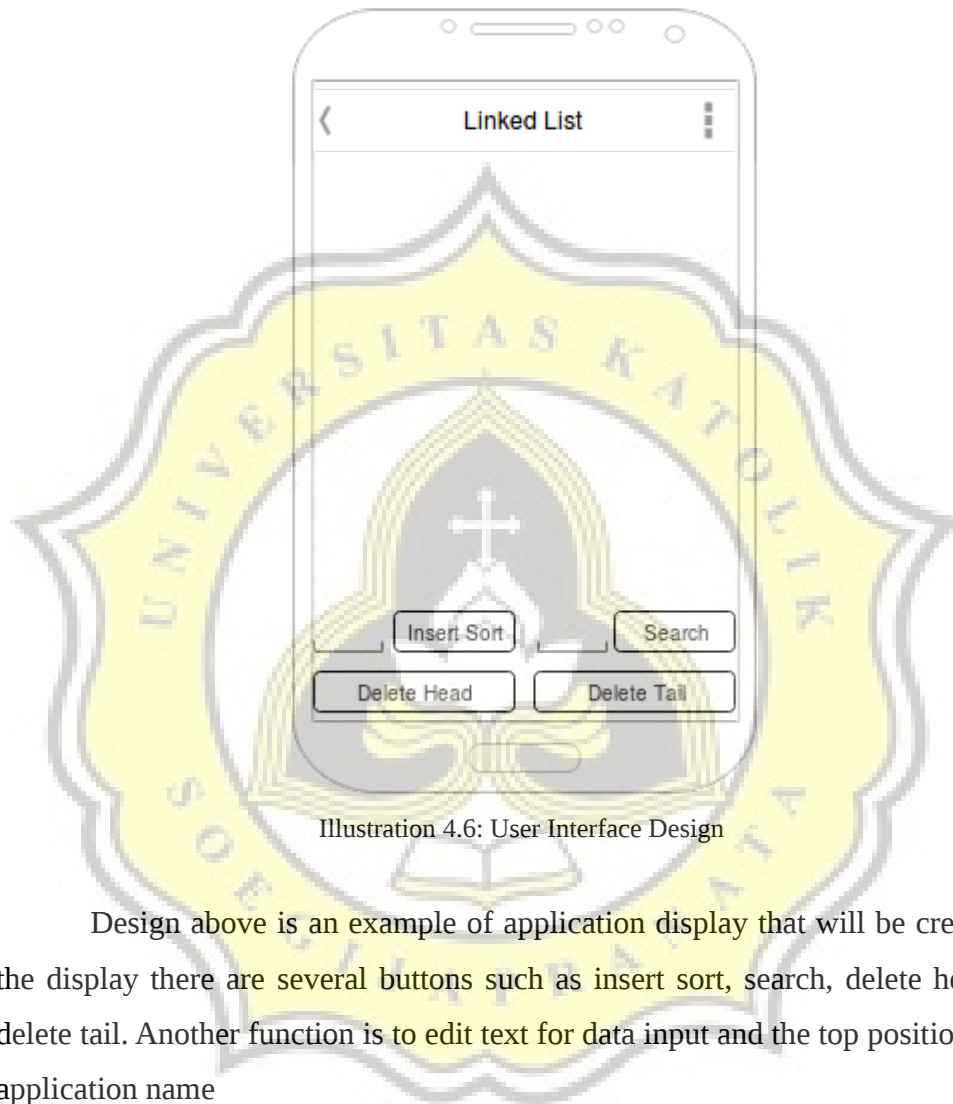


Illustration 4.6: User Interface Design

Design above is an example of application display that will be created. In the display there are several buttons such as insert sort, search, delete head and delete tail. Another function is to edit text for data input and the top position of the application name